Quest Astra - Simulation results

Engine selection

[C6Q-5]

Simulation control parameters

- Flight resolution: 800.000000 samples/second
- Descent resolution: 0.250000 samples/second
- Method: Explicit Euler

Launch conditions

- Altitude: 0.00000 Ft.
- Relative humidity: 50.000 %
- Temperature: 59.000 Deg. F
- Pressure: 29.9139 In.

  Wind speed model: Light (3-7 MPH)
    - Low wind speed: 3.0000 MPH
    - High wind speed: 7.9000 MPH

  Wind turbulence: Some variablility (0.04)
    - Frequency: 0.040000 rad/second
- Wind starts at altitude: 0.00000 Ft.
- Launch guide angle: -0.015 Degrees from vertical
- Latitude: 1.571 Degrees

Launch guide data:

- Launch guide length: 36.0000 In.
- Velocity at launch guide departure: 40.9843 MPH
- The launch guide was cleared at : 0.160 Seconds
- User specified minimum velocity for stable flight: 29.9996 MPH
- Minimum velocity for stable flight reached at: 24.1720 In.

Max data values:

- Maximum acceleration:Vertical (y): 28.539 geeHorizontal (x): 2.489 geeMagnitude: 28.544 gee
- Maximum velocity:Vertical (y): 310.2049 MPHHorizontal (x): 7.9000 MPHMagnitude: 310.6143 MPH

- Maximum range from launch site: 885.46260 Ft.
- Maximum altitude: 1395.68898 Ft.

Engine ejection charge data:

- Using a delay time of : 5.000 Seconds
- Velocity: 30.4747 MPH
- Altitude: 1389.81628 Ft.

Recovery system data

- P: Parachute Deployed at : 6.631 Seconds
- Velocity at deployment: 30.4747 MPH
- Altitude at deployment: 1389.81628 Ft.
- Range at deployment: -68.43504 Ft.

Time data

- Time to burnout: 1.631 Sec.
- Time to apogee: 7.112 Sec.
- Optimal ejection delay: 5.481 Sec.

Landing data

- Successful landing
- Time to landing: 124.312 Sec.
- Range at landing: 885.46260
- Velocity at landing: Vertical: -8.0556 MPH , Horizontal: 6.9368 MPH , Magnitude: 10.6307 MPH

Competition settings

Competition conditions are not in use for this simulation.